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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT: Jonathan Lacey  
SERIAL NO: 09/965,537  
FILING DATE: September 26, 2001  
TITLE: Broadcast Network Using Multi-Fiber Cable  
EXAMINER: D. J. Petkovsek  
ART UNIT: 2874  
ATTORNEY DKT: 10004238-1

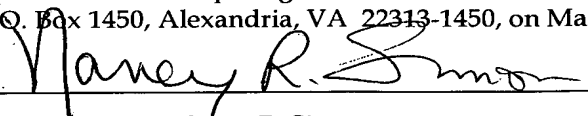
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**SUPPLEMENTAL APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Appellant hereby submits this Supplemental Appeal Brief in response to the Notification of Non-Compliant Appeal Brief dated February 10, 2006.

<p style="text-align: center;">CERTIFICATE OF MAILING 37 C.F.R. 1.8</p> <p>I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope with sufficient postage addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on March 10, 2006.</p> <p style="text-align: center;"> _____ Nancy R. Simon</p>
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### **REAL PARTY IN INTEREST**

The real party in interest is the assignee, Avago Technologies General IP (Singapore) Pte. Ltd., a Singapore corporation. Avago Technologies General IP (Singapore) Pte. Ltd. obtained all rights of ownership to this patent application from Agilent Technologies, Inc., a Delaware corporation.

### **RELATED APPEALS AND INTERFERENCES**

Currently there are no related appeal or interference proceedings that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the present Appeal.

### **STATUS OF CLAIMS**

Claims 1-3, 8-9, and 11-20 stand finally rejected by the Examiner. Claims 4-7 and 10 have been cancelled. Appellant appeals the final rejection of claims 1-3, 8-9, and 11-20.

### **STATUS OF AMENDMENTS**

An Amendment After Final Action was filed on February 28, 2005. The Amendment requested reconsideration of the application. The Examiner maintained the rejections in an Advisory Action dated March 8, 2005.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

An optical transmitter (902) broadcasts a single optical signal to multiple end users at different locations. A branch point that includes a 1x2 element (910) is optically coupled to the optical transmitter (902). A first multi-fiber cable (920) that includes a number (N) of individual fibers is optically coupled to one output of the 1x2 element (910), where the number (N) corresponds to the number of end users. A second multi-fiber cable (930) that includes the number (N) of individual fibers is optically coupled to the second output of the 1x2 element (910). Each end user (936) receives both an individual optical fiber (924) from the first multi-fiber cable (920) and an individual optical fiber (934) from the second multi-fiber cable (930). The optical signal may therefore be provided to each end user by at least two different routes, thereby providing route diversity in a broadcast network (900) (see Figure 9 and the description beginning on line 20 on page 13).

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

(1) Whether claims 1-3, 8, 9, and 11-20 are obvious over Nagahori et al. (USPN 5,896,213; hereinafter "Nagahori") in view of Geile et al. (USPN 6,336,201; hereinafter "Geile") and Liu et al. (USPN 5,485,465; hereinafter "Liu").

## **ARGUMENTS**

### *No Evidentiary Support In The Record*

The Manual Of Patent Examining Procedure states "assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in

the pertinent art.” Section 2144.03(A). “It is never appropriate to rely solely on ‘common knowledge’ in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based.” Id. “Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. See Lee, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); Zurko, 258 F.3d at 1386; 59 USPQ2d at 1697 (holding that general conclusions concerning what is ‘basic knowledge’ or ‘common sense’ to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection).” Section 2144.03(B). If an “applicant challenges a factual assertion as not properly officially noticed or not properly based upon common knowledge, the examiner must support the finding with adequate evidence.” Section 2144.04(C).

The Examiner does not argue Nagahori, Geile, and Liu teach optical fiber cables including a plurality of N individual fibers. Instead, the Examiner states it “would have been obvious at the time the invention was made to a person having ordinary skill in the art to use optical cables to protect the optical signals traveling to the end user, since cables are well-known forms of transmission lines in the art.” Appellant respectfully submits the Examiner makes this factual assertion without any evidentiary support in the record to reject claims 1-3, 8, 9, and 11-20.

Appellant challenged the factual assertion in the Amendments dated November 12, 2004 and February 28, 2005. The Examiner did not respond to Appellant’s request and failed to produce any evidentiary support for such factual assertions. Appellant therefore requests reversal of the final rejections of claims 1-3, 8, 9, and 11-20.

*Obviousness*

The Manual of Patent Examining Procedure (MPEP) states the following in Section 2142:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Appellant submits that the combination of Nagahori, Geile and Adair does not render Appellant's claimed invention obvious, since the combination of references does not meet any one of the three criteria.

*Claims 1-3, 8, 9, and 11-17*

The Examiner argues it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a tree of splitters as taught by Geile in the branching point of Nagahori for the purpose of sending an optical signal to a greater number of end uses. The Examiner also argues it would have been obvious to a person having ordinary skill in the art at the time of the invention to add a redundant second optical fiber cable as taught in Liu to the optical network of Nagahori to decrease errors and improve end user functionality (see page 3 and 4 in final office action). Appellant respectfully submits there is no motivation to combine the references to produce the claimed invention. The teachings in the references do not suggest or provide the motivation to combine the references. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP Section 2143.01 (emphasis original). The motivation or suggestion to combine references must be found in the prior art, not in Appellant's disclosure. And "the

level of skill in the art cannot be relied upon to provide the suggestion to combine references.” Id.

Moreover, “to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” MPEP Section 2143.03. Appellant respectfully submits the combination of references does not teach all of the claim limitations. Independent claim 1 recites, in relevant part, “c) a first optical fiber cable that includes a plurality of N individual fibers optically coupled to a first output of the 1x2 element; wherein the number N of individual fibers corresponds to the number of end users; and d) a second optical fiber cable that includes a plurality of N individual fibers optically coupled to a second output of the 1x2 element....” Nothing found in the cited references teaches or suggests these elements.

The Examiner relies on a portion of the description of figure 1 in Geile. The system shown in Figure 1 uses an optical fiber line (40) to transmit a video signal to a splitter (38). The splitter (38) splits the optical video signal onto a plurality of optical fiber lines (42), which also transmit optical telephony signals. The optical video and telephony signals are received by optical distribution nodes (18) that convert the optical signals to electrical signals. The electrical signals are then transmitted by a coaxial distribution portion of the hybrid fiber coax distribution network (11) to a plurality of remote units (46) (see col. 20, lines 44-58).

Liu teaches an apparatus (10) that includes a pair of communication ports (12, 14) through which the apparatus is connected to a second station in the network. A primary optical cable (16) connects to one of the communication ports while a secondary optical cable (18) connects to the other communication port. The optical cables (16, 18) both transmit and receive optical signals. During

Figures 1 and 2 in Nagahori use an optical transmission line to connect an optical transmitter-receiver (2) to a 1xN splitter (3). Optical transmission lines (51 to 5N) then connect the outputs of the splitter to N optical network units (11 to 1N). Figures 4 and 5 in Nagahori use an array fiber (5) to connect an array optical transmitter-receiver (6) to a multi-channel/single channel conversion cable (4). This allows each channel of the array transmitter-receiver to be connected one-to-one with a particular optical network unit (11 to 1N).

Appellant respectfully submits the combination of Nagahori, Geile, and Liu does not teach or suggest “c) a first optical fiber cable that includes a plurality of N individual fibers optically coupled to a first output of the 1x2 element; wherein the number N of individual fibers corresponds to the number of end users; and d) a second optical fiber cable that includes a plurality of N individual fibers optically coupled to a second output of the 1x2 element....” Nothing in the three references teaches or suggests the use of an optical fiber cable that includes a plurality of N individual fibers, where the number N corresponds to the number of end users. Based on the foregoing, Appellant respectfully submits the combination of Nagahori, Geile, and Liu does not render Appellant’s independent claim 1 obvious because the combination does not teach or suggest all of the elements in claim 1.

If an independent claim is not rendered obvious by prior art, then any claim depending from the independent claim is not obvious. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988) (see also M.P.E.P. § 2143.03). As discussed above, the combination of Nagahori, Geile, and Liu does not render Appellant’s independent claim 1 obvious. Therefore, claims 2, 3, 8, 9, and 11-17 are also not obvious in view of Nagahori, Geile, and Liu.

*Claims 18-20*

Appellant respectfully submits there is no motivation to combine the references to produce the claimed invention. The teachings in the references do not suggest or provide the motivation to combine the references. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP Section 2143.01 (emphasis original). The motivation or suggestion to combine references must be found in the prior art, not in Appellant's disclosure. And "the level of skill in the art cannot be relied upon to provide the suggestion to combine references." Id.

Moreover, "to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." Appellant respectfully submits the combination of references does not teach all of the claimed elements and limitations. Independent claim 18 recites, in relevant part, "transmitting the broadcast signal through at least one of the first and second multi-optical-fiber cables; and delivering the broadcast signal to a respective user through a dedicated individual optical fiber in the at least one multi-optical-fiber cable that was used to transmit the broadcast signal." As discussed earlier, none of the references teach or suggest the use of multi-optical-fiber cables. And none of the references teach or suggest "delivering the broadcast signal to a respective user through a dedicated individual optical fiber in the at least one multi-optical-fiber cable that was used to transmit the broadcast signal." Appellant therefore submits the combination of Nagahori, Geile, and Liu does not render Appellant's independent claim 18 obvious because the combination does not teach or suggest all of the elements in claim 18.

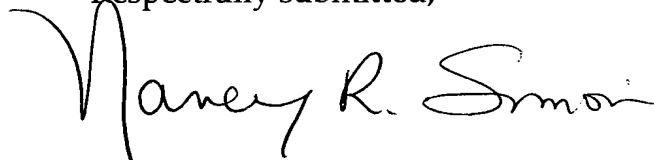
If an independent claim is not rendered obvious by prior art, then any claim depending from the independent claim is not obvious. In re Fine, 5 USPQ2d 1596

(Fed. Cir. 1988) (see also M.P.E.P. § 2143.03). As discussed above, the combination of Nagahori, Geile, and Liu does not render Appellant's independent claim 18 obvious. Therefore, claims 19 and 20 are also not obvious in view of Nagahori, Geile and Liu.

In light of the arguments above, Appellant believes that all claims pending in the application are allowable and therefore requests a reversal of the final rejection of such claims.

Respectfully submitted,

Date: March 10, 2006

A handwritten signature in black ink that reads "Nancy R. Simon". The signature is fluid and cursive, with the first name "Nancy" being the most prominent part.

Nancy R. Simon

Attorney for Appellant

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## CLAIMS APPENDIX

Claim 1 (Previously presented): A broadcast network comprising:

- a) an optical transmitter for broadcasting a single optical signal to a plurality of end users at different locations;
- b) a branch point optically coupled to the optical transmitter, wherein the branch point includes a 1x2 element;
- c) a first optical fiber cable that includes a plurality of N individual fibers optically coupled to a first output of the 1x2 element; wherein the number N of individual fibers corresponds to the number of end users; and
- d) a second optical fiber cable that includes a plurality of N individual fibers optically coupled to a second output of the 1x2 element, wherein the number N of individual fibers corresponds to the number of end users, and the first and second optical fiber cables provide route diversity in the broadcast network.

Claim 2 (Original): The broadcast network of claim 1 wherein the network is arranged as a logical star.

Claim 3 (Original): The broadcast network of claim 1 wherein the network is arranged as a physical bus.

Claim 4-7 (Canceled)

Claim 8 (Original): The broadcast network of claim 1 further comprising:

a central office, wherein the branch point is located in the central office.

Claim 9 (Original): The broadcast network of claim 1 wherein the branch point is located in the field.

Claim 10 (Canceled)

Claim 11 (Previously presented): The broadcast network of claim 1 further including:

e) at least one optical receiver for receiving one of the individual fibers.

Claim 12 (Previously presented): The broadcast network of claim 1 further including:

e) a plurality of optical receivers; wherein each receiver is coupled to a respective individual fiber in the first optical fiber cable and a respective individual fiber in the second optical fiber cable.

Claim 13 (Original): The broadcast network of claim 1 wherein the optical transmitter includes:

an optical source for providing an optical signal;

an optical modulator for receiving data signals, for receiving the optical signal, and for modulating the optical signal based on the data signals to generate a modulated optical signal.

Claim 14 (Original): The broadcast network of claim 13 wherein the optical transmitter further includes:

a multiplexer for receiving a plurality of data signals and based thereon for generated a multiplexed signal;

wherein the multiplexed signal is provided to the optical modulator.

Claim 15 (Previously presented): The broadcast network of claim 14 wherein the optical receiver includes:

a photodetector for receiving a modulated optical signal that includes data signals, for demodulating the modulated optical signal to recover the data signals.

Claim 16 (Original): The broadcast network of claim 15 wherein the optical receiver further includes:

a de-multiplexer for receiving a recovered multiplexed data signal and based thereon for generating the individual data signals.

Claim 17 (Original): The broadcast network of claim 1 wherein the optical transmitter transmits the signal on all the individual fibers.

Claim 18 (Previously presented): A method for broadcasting information through a broadcast network using a first multi-optical-fiber cable that includes a plurality of N individual optical fibers and a second multi-optical-fiber cable that includes a plurality of N individual optical fibers where N represents the number of users, the method comprising:

receiving a broadcast signal;

transmitting the broadcast signal through at least one of the first and second multi-optical-fiber cables; and

delivering the broadcast signal to a respective user through a dedicated individual optical fiber in the at least one multi-optical-fiber cable that was used to transmit the broadcast signal.

Claim 19 (Original): The method of claim 18 further comprising the steps of:

using an optical receiver to receive the signal.

Claim 20 (Previously presented): The method of claim 18 further comprising the steps of:

transmitting the same signal on all the individual fibers of the at least one multi-optical-fiber cable.

## **EVIDENCE APPENDIX**

**RELATED PROCEEDINGS APPENDIX**